

Exhibit 12

Illustrative Claim Chart for U.S. Patent No. 9,651,320




| Claim 1 | Exemplary Dell Servers |
|---|---|
| [Preamble] ICT (Information and Communication Technology) equipment having an electronic component, the ICT equipment comprising: | <p>The Exemplary Dell Servers are ICT (Information and Communication Technology) equipment having an electronic component.</p> <p><i>See, e.g.,</i> https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 4:</p> |

Claim 1

Exemplary Dell Servers

This guide provides insight into the cooling design and thermal management of the PowerEdge R710, R610, and T610 monolithic servers. Please visit www.DELL.com for a more comprehensive overview of these servers.

Table 1. R710, R610, and T610 Servers Overview

| Dell PowerEdge | R610 | R710 | T610 |
|---------------------------|--|---|---|
| Front View |  |  |  |
| Height | 1U | 2U | 5U |
| Processors | Intel® Xeon® 5500 | | |
| Number of CPU sockets | Dual | | |
| Memory Type | DDR3 | | |
| Memory Slots | 12 | 18 | 12 |
| PCI Slots | 2 | 4 | 5 |
| Hard drives (Hot Plug) | 6 - 2.5" Small form factor | 6 - 3.5" Large form factor 8 - 2.5" Small form factor | 8 - 3.5" Large form factor 8 - 2.5" Small form factor |
| Number of Fans | 6 - Dual CPUs 5 - Single CPU | 5 - Dual CPUs 4 - Single CPU (Hot Plug) | 2 - non-redundant 4 - redundant |
| Power Supplies (Hot Plug) | n+1 redundancy | | |




https://i.dell.com/sites/csdocuments/Product_Docs/en/us/dell_emc_poweredge_rack_quick_compare_table.pdf:

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<https://infohub.delltechnologies.com/en-US/p/next-generation-poweredge-servers-thoughtful-thermal-design/>: “Next-Generation Intel and AMD PowerEdge servers will support internal components with increased capabilities, such as higher CPU core counts and memory frequencies. These new features bring with them increased power consumption. Dell Technologies has refined its thermal design to optimize cooling of these enhanced hardware ingredients.... High Performance

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|--|---|
| | <p>Fans – New higher performance fans have been added to increase the amount of cool air pushed through the system, targeted at higher power semiconductors (CPUs, GPUs and NVMe drives)”</p> <p>https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/es/ai/Advanced-Thermal-Control-Whitepaper.pdf: “The current generation of Dell™ PowerEdge™ servers achieves this by incorporating sophisticated thermal control, strategic component placement and isolation, airflow management, and power-efficient fans.”</p> |
| a first temperature sensor that detects a component temperature of the electronic component included in the ICT equipment; | <p>The Exemplary Dell Servers include a first temperature sensor that detects a component temperature of the electronic component included in the ICT equipment.</p> <p>See, e.g., https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 13:</p> |

Claim 1**Exemplary Dell Servers****4 iDRAC Thermal Management and Fan Control**

The Dell PowerEdge R710, R610, and T610 fan control and thermal management reside on the integrated Dell Remote Access Controller (iDRAC), which ensures that the appropriate fan speeds create an airflow to properly cool the system. The iDRAC thermal management and fan control utilize multiple static and dynamic inputs to determine the appropriate output responses as illustrated in Figure 7. The iDRAC uses a pulse width modulated (PWM) signal to communicate the desired speed to the fan.

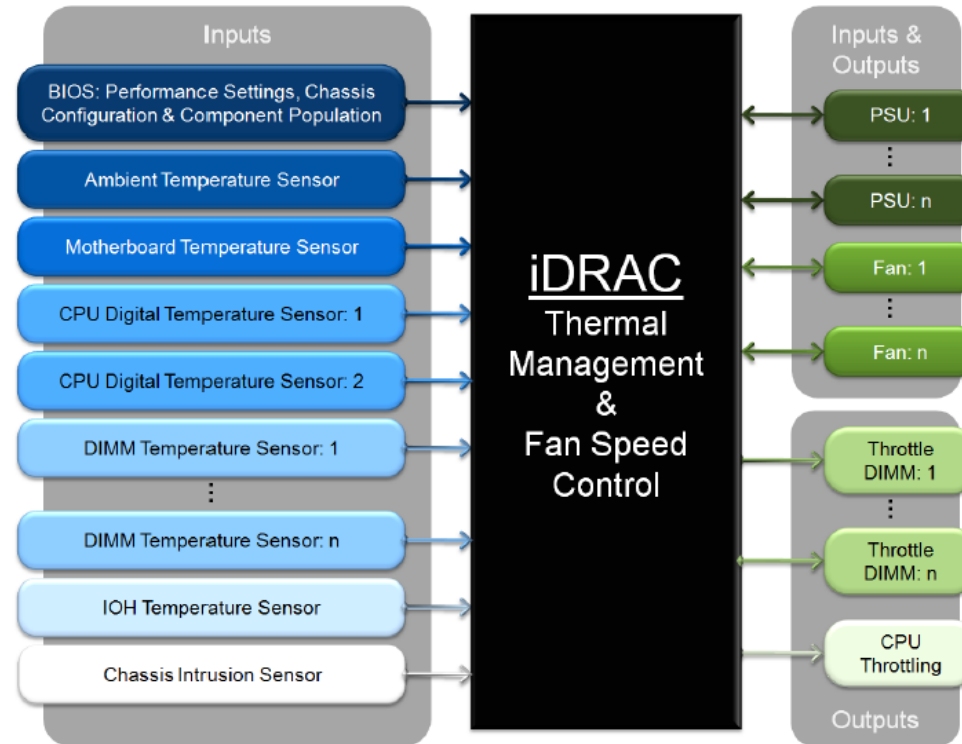
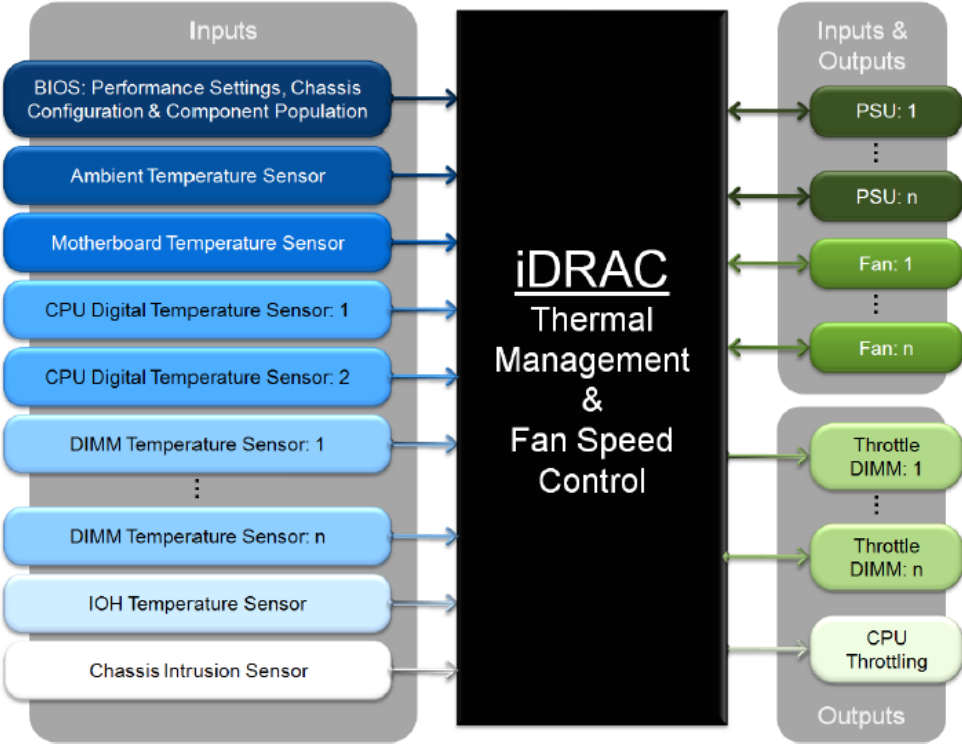











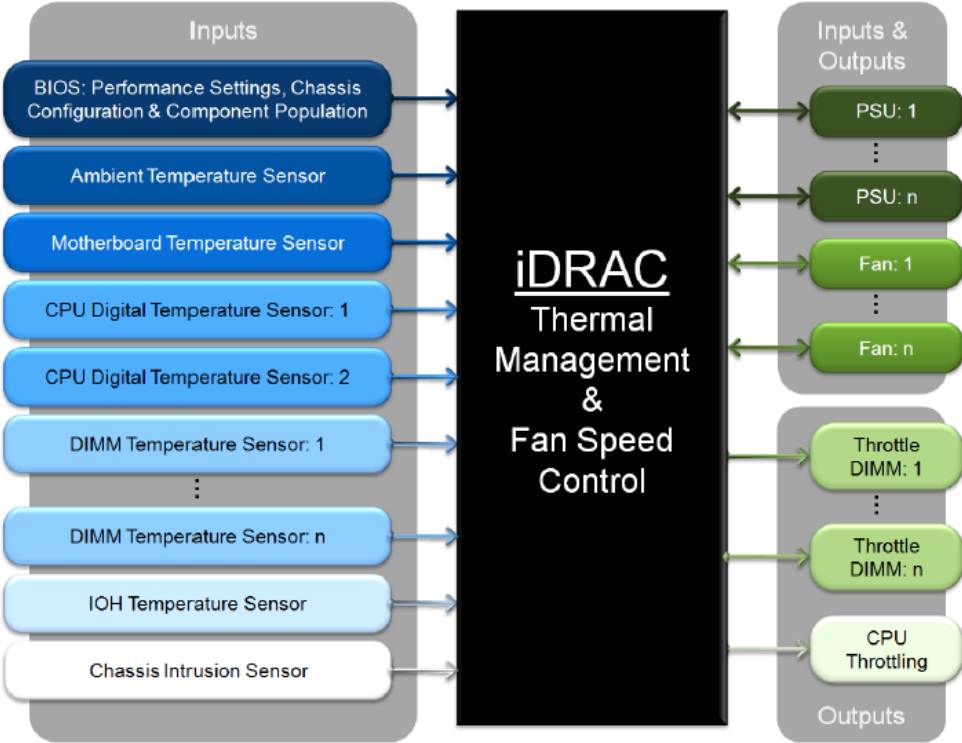
Figure 7. Output Responses

https://www.delltechnologies.com/asset/en-us/solutions/infrastructure-solutions/briefs-summaries/integrated_dellenc_remote_access_controller.pdf?ref=cpcl_open-manage-idrac-cta-content-item-30_cta_link_readbrief:

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|---|--|
| | <p>Modernize with Dell PowerEdge portfolio</p> <p>The integrated Dell Remote Access Controller (iDRAC) delivers advanced, agent-free local and remote server administration. The iDRAC provides a secure means to automate a multitude of management tasks. Given that iDRAC is embedded in every PowerEdge server, there's no additional software to install. Once iDRAC has been enabled, you will have a complete set of server management features at your fingertips.</p> |
| <p>a second temperature sensor that detects a temperature of an intake air; and</p> | <p>The Exemplary Dell Servers include a second temperature sensor that detects a temperature of an intake air.</p> <p><i>See, e.g.,</i> https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 5:</p> <p>Cooling typically consumes a significant portion of the overall data center power budget. Because of this, some data centers are adopting higher temperature operation to enhance data center cooling efficiency. These higher ambient (server inlet or supply) temperatures enable energy reductions in the refrigeration process, whether the facility uses Computer Room Air Conditioners (CRACs) or Computer Room Air Handlers (CRAHs). Additional fan power is consumed to support the elevated ambient and is a tradeoff to the cooling power saved at the data center level. Dell has optimized the PowerEdge R610 and R710 monolithic servers for both traditional data center infrastructures (<25 °C) as well as higher ambient applications (≤28 °C).</p> <p>https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 13:</p> |

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| | <p>4 iDRAC Thermal Management and Fan Control</p> <p>The Dell PowerEdge R710, R610, and T610 fan control and thermal management reside on the integrated Dell Remote Access Controller (iDRAC), which ensures that the appropriate fan speeds create an airflow to properly cool the system. The iDRAC thermal management and fan control utilize multiple static and dynamic inputs to determine the appropriate output responses as illustrated in Figure 7. The iDRAC uses a pulse width modulated (PWM) signal to communicate the desired speed to the fan.</p>  <p>Figure 7. Output Responses</p> |
| a microprocessor including: | The Exemplary Dell Servers include a microprocessor. |

| Claim 1 | Exemplary Dell Servers | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|------|------|------------|--|---|---|--------|----|----|----|------------|-------------------|--|--|-----------------------|------|--|--|-------------|------|--|--|--------------|----|----|----|-----------|---|---|---|------------------------|----------------------------|--|--|----------------|---------------------------------|---|------------------------------------|---------------------------|----------------|--|--|
| | <p>See, e.g., https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 4:</p> <p>This guide provides insight into the cooling design and thermal management of the PowerEdge R710, R610, and T610 monolithic servers. Please visit www.DELL.com for a more comprehensive overview of these servers.</p> <p>Table 1. R710, R610, and T610 Servers Overview</p> <table><tr><th>Dell PowerEdge</th><th>R610</th><th>R710</th><th>T610</th></tr><tr><td>Front View</td><td></td><td></td><td></td></tr><tr><td>Height</td><td>1U</td><td>2U</td><td>5U</td></tr><tr><td>Processors</td><td colspan="3">Intel® Xeon® 5500</td></tr><tr><td>Number of CPU sockets</td><td colspan="3">Dual</td></tr><tr><td>Memory Type</td><td colspan="3">DDR3</td></tr><tr><td>Memory Slots</td><td>12</td><td>18</td><td>12</td></tr><tr><td>PCI Slots</td><td>2</td><td>4</td><td>5</td></tr><tr><td>Hard drives (Hot Plug)</td><td>6 - 2.5" Small form factor</td><td>6 - 3.5" Large form factor 8 - 2.5" Small form factor</td><td>8 - 3.5" Large form factor 8 - 2.5" Small form factor</td></tr><tr><td>Number of Fans</td><td>6 - Dual CPUs 5 - Single CPU</td><td>5 - Dual CPUs 4 - Single CPU (Hot Plug)</td><td>2 - non-redundant 4 - redundant</td></tr><tr><td>Power Supplies (Hot Plug)</td><td colspan="3">n+1 redundancy</td></tr></table> <p>https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 13:</p> | Dell PowerEdge | R610 | R710 | T610 | Front View |  |  |  | Height | 1U | 2U | 5U | Processors | Intel® Xeon® 5500 | | | Number of CPU sockets | Dual | | | Memory Type | DDR3 | | | Memory Slots | 12 | 18 | 12 | PCI Slots | 2 | 4 | 5 | Hard drives (Hot Plug) | 6 - 2.5" Small form factor | 6 - 3.5" Large form factor 8 - 2.5" Small form factor | 8 - 3.5" Large form factor 8 - 2.5" Small form factor | Number of Fans | 6 - Dual CPUs 5 - Single CPU | 5 - Dual CPUs 4 - Single CPU (Hot Plug) | 2 - non-redundant 4 - redundant | Power Supplies (Hot Plug) | n+1 redundancy | | |
| Dell PowerEdge | R610 | R710 | T610 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Front View |  |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Processors | Intel® Xeon® 5500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of CPU sockets | Dual | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| PCI Slots | 2 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hard drives (Hot Plug) | 6 - 2.5" Small form factor | 6 - 3.5" Large form factor 8 - 2.5" Small form factor | 8 - 3.5" Large form factor 8 - 2.5" Small form factor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of Fans | 6 - Dual CPUs 5 - Single CPU | 5 - Dual CPUs 4 - Single CPU (Hot Plug) | 2 - non-redundant 4 - redundant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Supplies (Hot Plug) | n+1 redundancy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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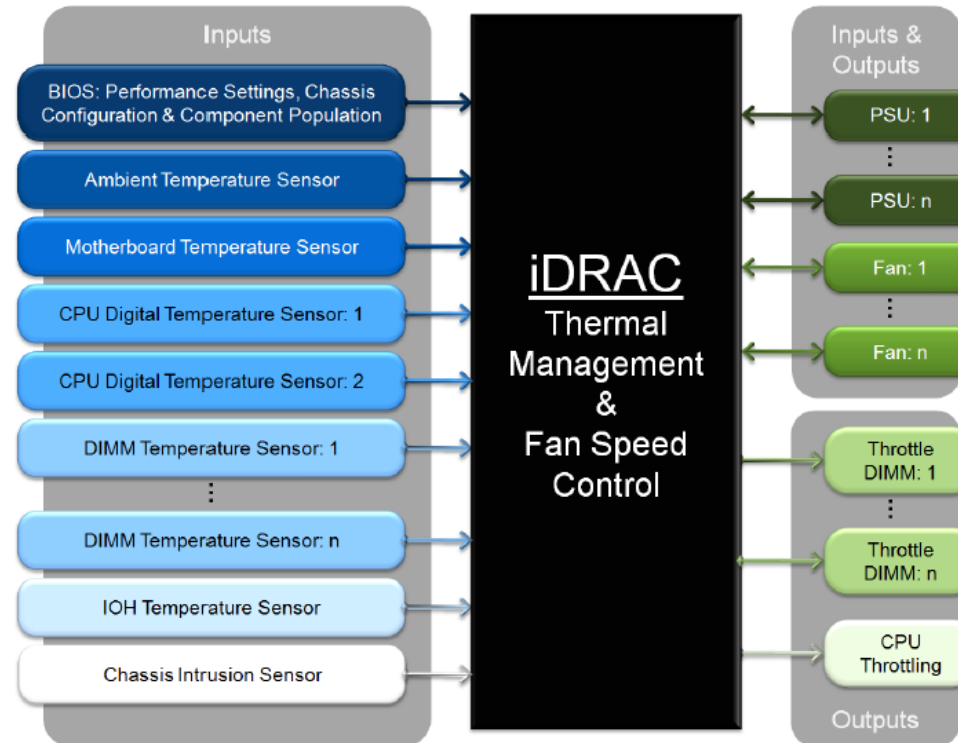


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|--|---|
| | <p>Dell has incorporated PID control into the iDRAC for CPU cooling to optimize the thermal control. PID is an advanced control algorithm that utilizes predictive calculations based on a measured process value compared against a target value to determine the appropriate response. The iDRAC reads the temperature of the processor and the PID algorithm uses it as the process value to determine the appropriate fan response. The following sub-components of PID control work with one another to determine the optimal fan speed:</p> <p><u>Proportional</u> control responds to the current temperature based on its relation to the target temperature. When the temperature is below the target the proportional control requests a reduction in fan speed and requests an increase in speed when the temperature exceeds the target.</p> <p><u>Integral</u> control looks at errors between the target temperature and current temperature over time. Integral control requests fan speed changes based on how long a temperature has been above or below the target value.</p> <p><u>Derivative</u> control looks at the increase or decrease rate in temperature to decide how to respond with fan speeds. An increased or decrease in fan speed is requested based on how fast the temperature of the processor is rising or falling independent of how close the temperature is to the target temperature.</p> |
| <p>a control unit that controls the number of rotations of the cooling fan based on the index value calculated by the declination index value calculation unit and the temperature of the intake air by the second temperature sensor.</p> | <p>The Exemplary Dell Servers include a control unit that controls the number of rotations of the cooling fan based on the index value calculated by the declination index value calculation unit and the temperature of the intake air by the second temperature sensor.</p> <p>See, e.g., https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/server-poweredge-11g-thermal-design-en.pdf at 13:</p> |

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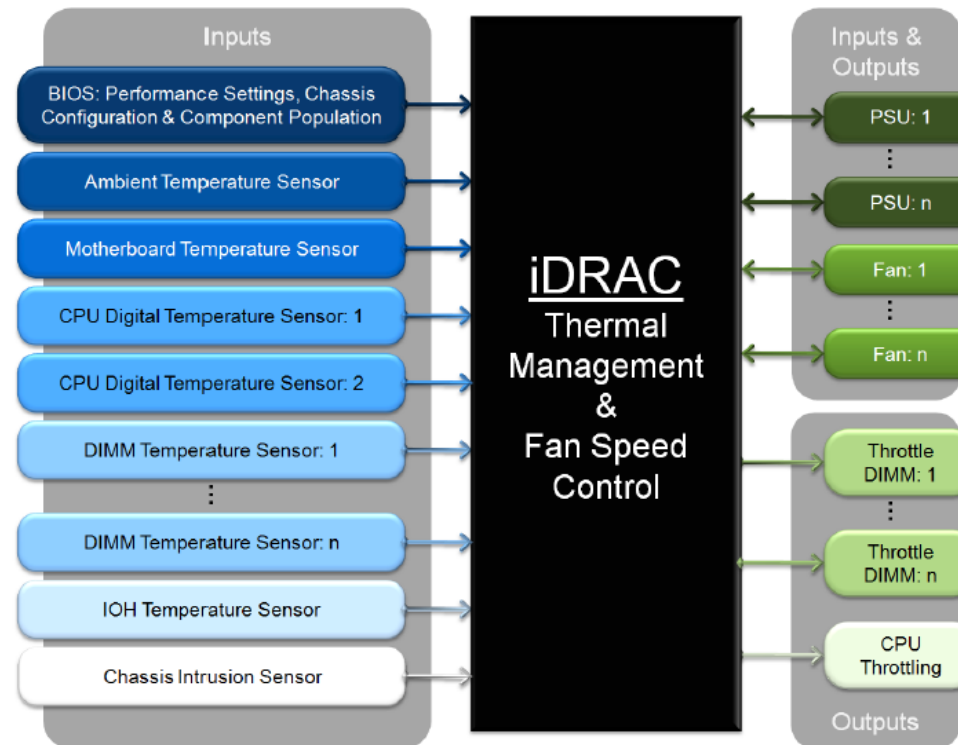


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